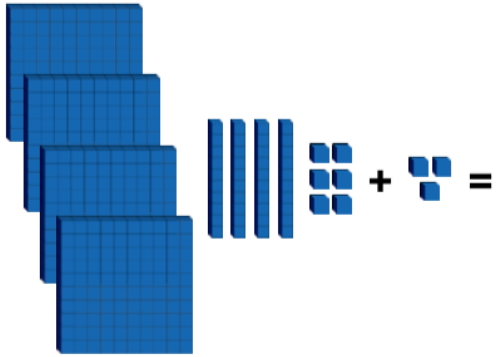
Year 3 Calculation

Concrete – Pictorial - Abstract

(Addition, Subtraction, Multiplication, Division)

Year 3 - adding a **three-digit** number and **ones**; a **three-digit number** and **tens**; a **three-digit number** and **hundreds**

Concrete Resource:

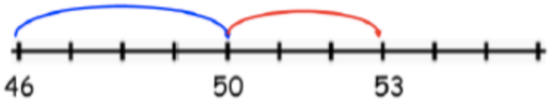


Abstract: 446 + 3 = 449

Base 10 (or PV Counters) – Adding Ones

Concrete Resource/Pictorial Representation:

+ 4 + 3



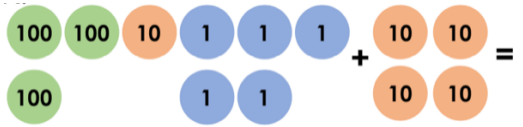
Abstract: 46 + 7 = 53

so

346 + 7 = 353

Number Line– Adding Ones

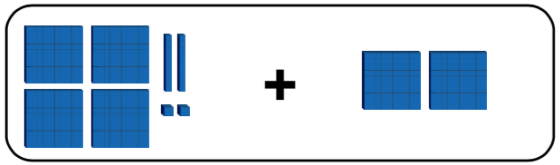
Concrete Resource:



Abstract: 315 + 40 = 355

Place Value Counters (or Base 10) – Adding Tens

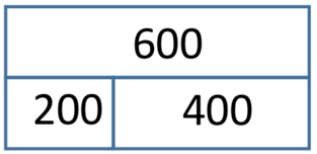
Concrete Resource:



Abstract: 422 + 200 = 622

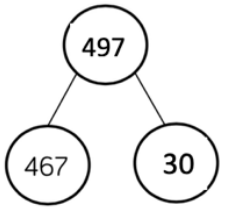
Base 10 (or PV counters) – Adding Hundreds

Pictorial Representation – Abstract Calculation



200 + 400 = 600

Bar Models



467 + 30 = 497

Part Whole Model

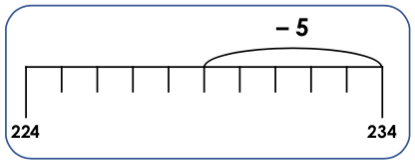
Year 3 Calculation

Concrete – Pictorial - Abstract

(Addition, Subtraction, Multiplication, Division)

Year 3 - subtracting a **three-digit** number and **ones**; a **three-digit number** and **tens**; a **three-digit number** and **hundreds**

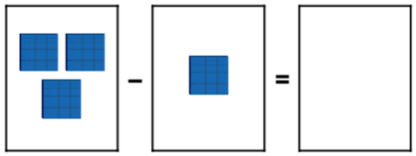
Pictorial:



Abstract:
234 – 5 = 229

Using number lines can help us subtract ones.

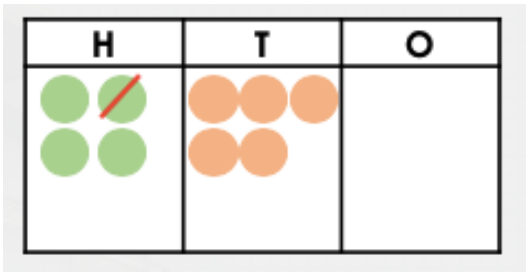
Concrete/Pictorial:



Abstract:
300 – 100 = 200

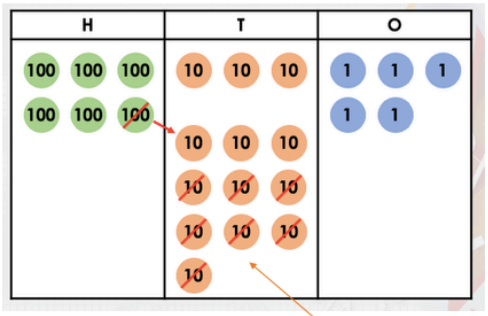
Using base 10 can help up subtract multiples of 100.

Concrete Resources: Place Value Counters/Base 10



Abstract: 450 – 100 = 350

Concrete Resources: Place Value Counters/Base 10



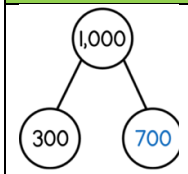
5 1
6 3 5
- 7 0
5 6 5

Abstract

Exchange 1 hundred for 10 tens

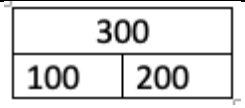
Place Value Counters – Column Subtraction (with or without exchanging)

Pictorial Representation – Abstract Calculation



1000 – 700 = 300
1000 – 300 = 700 Abstract

Part Whole Model



Abstract: 300 – 200 = 100 or 300 – 100 = 200

Bar Model

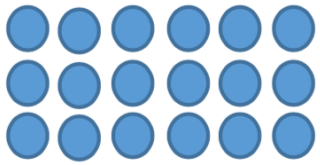
Year 3 Calculation

Concrete – Pictorial - Abstract

(Addition, Subtraction, Multiplication, Division)

Year 3 – use **multiplication** (x3, x4 and x8); multiply **two-digit numbers** times **one-digit numbers** using formal written methods

Concrete/Pictorial:



Abstract Calculation:

3 x 6 = 18 **or** 6 x 3 = 18

3 lots of 6 = 18

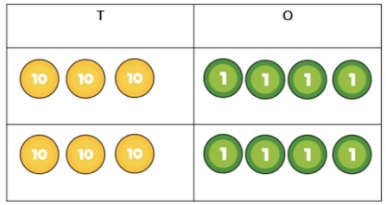
6 **equal** groups of 3 = 18

Making Arrays – Repeated Addition

Concrete/Pictorial:

34 x 2 =

34 is the **same as** 3 tens and 4 ones



Abstract Calculation:

2 lots of 34 = 68

2 x 34 = 68

Place Value Counters

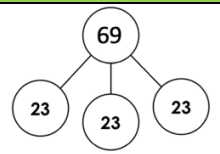
Abstract:

34 x 2 =

	T	O
	3	4
×		2
	6	8

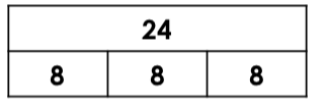
Column Multiplication

Pictorial Representation – Abstract Calculation



Abstract: 23 x 3 = 69

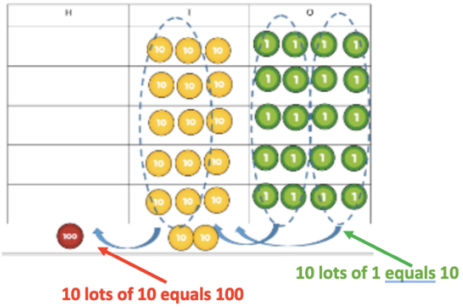
Part-Whole Model



Abstract: 3 x 8 = 24

Bar Model

Concrete/Pictorial:



Abstract: 34 x 5 = 170

Place Value Counters – Column Multiplication (with crossing)

Abstract Calculation: 35 x 5 = 175

	T	O
	3	5
×		5
1	7	5
1	2	

Written Column Multiplication (with crossing)

Year 3 Calculation

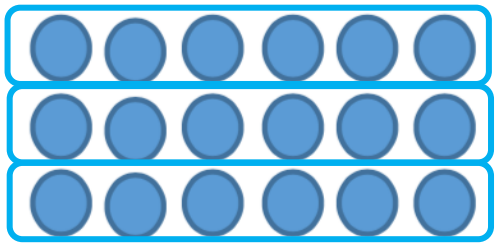
Concrete – Pictorial - Abstract

(Addition, Subtraction, Multiplication, Division)

Year 3 – use **division** facts within the multiplication tables they know (x3, x4 and x8)

Making Arrays – Grouping

Concrete/Pictorial:



Abstract Calculation:

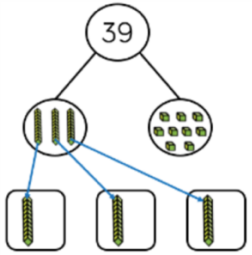
18 ÷ 3 = 6

There are 3 **equal groups** with 6 in each group.

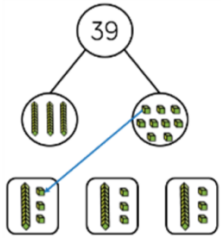
Base 10 – Partitioning and Sharing Equally

Concrete/Pictorial: 39 ÷ 3 =

Step 1: Share the tens



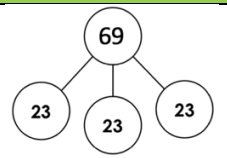
Step 2: Share the ones



Abstract: There are 3 **equal groups** with 13 in each group.

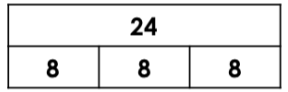
39 ÷ 3 = 13

Pictorial Representation – Abstract Calculation



Abstract: 69 ÷ 3 = 23

Part-Whole Model



Abstract: 24 ÷ 8 = 3

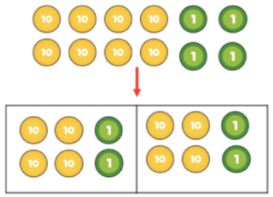
Bar Model

Place Value Counters Shared Equally

Concrete/Pictorial:

*84 **shared equally** between 2.*

There are 42 counters in each group.



Abstract Calculation: 84 ÷ 2 = 42

Base 10 Shared Equally

Concrete/Pictorial:

There are 11 counters in each group.



There are 11 counters each.

Number Line – Repeated Subtraction

Pictorial/Abstract:

45 ÷ 4 = 11 r 1

